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CABLE MODEM SYSTEM

5 ABSTRACT OF THE DISCLOSURE

10 A method for communicating information includes allocating a time slot in a time division multiple access system for a transmission from a subscriber to a headend which is sufficient for only a first portion of a transmission. A second portion of the transmission is transmitted in other than the first time slot. Synchronization of a clock of the subscriber is enhanced with respect to a clock of the headend using a message transmitted from the headend to the subscriber which is indicative of an error in a subscriber transmission time with respect to the time slot. A feedback loop process is used to determine at least one of fractional symbol timing correction and carrier phase correction of a transmission from the subscriber to the headend. Quality of at least one channel is monitored and modulation is changed in response to changes in monitored channel quality. Information representative of parameters of received time division multiple access data is used to facilitate processing of the received time division multiple access data in a receiver. Filter coefficients are generated at the headend from a ranging signal which was transmitted from a subscriber to the headend and the filter coefficients are transmitted from the headend to the subscriber, where the filter coefficients are then used to compensate for noise in a transmission from the subscriber to the headend.

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